

IN THE CLAIMS:

Please CANCEL claims 37-49 without prejudice to or disclaimer of the recited subject matter.

Please AMEND claims 61, 67 and 71, and ADD new claims 72-80, as follows. For the Examiner's convenience, all claims currently pending in this application have been reproduced below:

1-60. (Cancelled)

61. (Currently Amended) A position detection apparatus for detecting a position of a mark on an object, said apparatus comprising:


a camera which captures an image of the mark;

an extraction section which extracts an edge position of the mark based on the image of the mark;

a determination section which determines a position of the mark by comparing the edge position with a template; and


a control section which changes at least one of a parameter used by ~~at least one of~~ said extraction section and a parameter used by said determination section, based on a result of the comparing by said determination section.

62. (Previously Presented) An apparatus according to claim 61, wherein the parameter changed by said control section is stored in a memory and used as a base for processing to be executed later.



63. (Previously Presented) An apparatus according to claim 61, wherein said determination section performs the comparing by evaluating a degree of matching between the edge position and the template.

64. (Previously Presented) An apparatus according to claim 63, wherein said determination section determines the position of the mark as a center position of the template based on the degree of matching.



65. (Previously Presented) An apparatus according to claim 61, wherein said determination section performs the comparing using a correlation method.

66. (Previously Presented) An apparatus according to claim 61, wherein said extraction section extracts the edge position by differentiating a signal of the image.

67. (Currently Amended) An apparatus according to claim ~~61~~ 66, wherein said extraction section differentiates the signal along each of at least two directions.

68. (Previously Presented) An apparatus according to claim 61, wherein the template includes a plurality of positions of interest.

69. (Previously Presented) An apparatus according to claim 61, wherein a parameter used for at least one of a noise removal processing for the image and a correction of the edge position is changed based on a result of the comparing by said determination section.

70. (Previously Presented) An apparatus according to claim 61, wherein said camera captures the image under a dark field illumination.

71. (Currently Amended) A position detection method of detecting a position of a mark on an object, said method comprising steps of:

capturing an image of the mark using a camera;
extracting an edge position of the mark based on the image of the mark;
determining a position of the mark by comparing the edge position with a template; and
changing at least one of a parameter used ~~in at least one of~~ said extraction step and a parameter used in said determination step, based on a result of the comparing in said determining step.

72. (New) A method according to claim 71, wherein the parameter changed in said changing step is stored in a memory and used as a base for processes to be executed later.

73. (New) A method according to claim 71, wherein, in said determining step, the comparing is performed by evaluating a degree of matching between the edge position and the template.

74. (New) A method according to claim 73, wherein, in said determining step, the position of the mark is determined as a center position of the template based on the degree of matching.

75. (New) A method according to claim 71, wherein, in said determining step, the comparing is performed using a correlation method.

76. (New) A method according to claim 71, wherein, in said extraction step, the edge position is extracted by differentiating a signal of the image.

77. (New) A method according to claim 76, wherein, in said extraction step, the signal is differentiated along each of at least two directions.

78. (New) A method according to claim 71, wherein the template includes a plurality of positions of interest.

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79. (New) A method according to claim 71, wherein a parameter used for at least one of a noise removal processing for the image and a correction of the edge position is changed based on a result of the comparing in said determination step.

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80. (New) A method according to claim 71, wherein, in said capturing step, the camera captures the image under a dark field illumination.
